



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

004258

C10-OH

Job Sheet 171614



Part No: C10-OH

Job Qty: 1 ea

Part Name: C-Series Remote Hook 10,000 lbs Lift Capacity



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/5/18

Job Tracking No: RA176/2856

Due Date: 2/16/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: O&OPM-C10 REV.4 IPP REV:A 18.01.30 NEW ISSUE DD VERF:DP

Ship Via:

SN M483-01

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup	Run	Workcenter / Supplier	Lead Time	
100	Start up Operation	1 Ea		2/15/18	0.00	0.00	Start Up Small Fab-4		18-06-04 BS
110	Small Fab	1 pcs		2/15/18	0.00	1.00	Small Fab-9		AP
120	QC	1 pcs		2/15/18	0.00	0.00	QC5		SB
130	Customer Acceptance	1 pcs		2/15/18	0.00	0.00			
140	Outsource	1 pcs		2/15/18	0.00	0.00	40060		21 JUN 04 2018
150	Packaging	1 pcs		2/15/18	0.00	0.00	Packaging2		21 JUN 06 19
160	QC	1 pcs		2/15/18	0.00	0.00	QC6		38
170	Small Fab	1 pcs		2/16/18	0.00	1.00	Small Fab-9		AR 9-89
180	QC	1 pcs		2/16/18	0.00	0.00	QC5		DAS 88
185	DC	1 pcs		2/16/18	0.00	0.00	DC		21 JUL 09 2018
190	Packaging	1 pcs		2/16/18	0.00	0.00	Packaging3-2		21 9-86 BB. m.d. GA
200	QC21-FG	1 Ea		2/16/18	0.00	0.00	QC21		21 JUL 09 2018

Part Op 110 - TEST ASSEMBLY. DISASSEMBLE ASSEMBLY. INSPECT DAMAGE PART.

Descriptions: 170 - RE-ASSEMBLY. ***All assembly to be done in accordance with manual*** TEST ASSEMBLY.

185 - Photocopy blue file and create labels

LOCTITE 648 (M138865) AEROSHELL GREASE NO.

Outsource 145 - Groupe Altech - P0040094 CT 18-6-6

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
C10-AR	C-Series Remote Hook 10,000 lbs Lift Capacity	1 Ea (1 ea)	100-Start up Operation	
188-FPSS-1/4-20-3/8	Set Screw	2 Ea (2 ea)	170-Small Fab	8048557
188-FPSS-1032-1/4	Set Screw	2 Ea (2 ea)	170-Small Fab	8073061
188-SHCS-1032-3/4	Bolt	8 Ea (8 ea)	170-Small Fab	8042363
2595K2	Heat Shrink	1 (1 ea)	170-Small Fab	
32446	Crimp Terminal	2 (2 ea)	170-Small Fab	
32448	16-14 AWG Knife Connector	2 (2 ea)	170-Small Fab	8041618
600.1309	CANAM Plate ID Label	1 (1 ea)	170-Small Fab	
600.1347	C10 Warning Label	1 (1 ea)	170-Small Fab	
AN4-23A	Bolt	2 Ea (2 ea)	170-Small Fab	FM123434-40
AN6-31A	Bolt	6 Ea (6 ea)	170-Small Fab	8048403 8065330
C10-1	Side Plate Solenoid Side	1 (1 ea)	170-Small Fab	
C10-10-1	Actuator Shaft	1 (1 ea)	170-Small Fab	
C10-10-2	Actuator Pin	1 (1 ea)	170-Small Fab	8029190
C10-10-3	Actuator Bushing	2 (2 ea)	170-Small Fab	8068885
C10-11	Manual Release Knob	1 (1 ea)	170-Small Fab	

DC1: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS				
Part No. _____		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	
NCR No. _____		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	
		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	
		Large Fab ☐	Composite ☐	Supplier ☐		

Date : _____ Step #: _____

Description Work Order Deviation

Job No: 171614
Start up Operation 02/06/18

Change No: _____
Operation: _____
Revision: OH
Original Serial #: S039492
PART NO: C10

C-Series Remote Hook 10,000 lbs Lift Capacity



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐		Pressure/Fc ☐ Bending ☐ Centre Not ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Broken/Damage/Detect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

51042) Approval

Completed By

Id / Supervisor
al Verification

A Coordinator
approval

ned Wrong
e Dimensions
nder tolerance

C10-12	Solenoid Assembly (Figure 4)	1 (1 ea)	170-Small Fab	
C10-12-0	Solenoid	1 (1 ea)	170-Small Fab	
C10-12-1	Spring Pin	1 (1 ea)	170-Small Fab	5029434
C10-2	Side Plate - MRK	1 (1 ea)	170-Small Fab	
C10-21-1	Clock Spring	2 (2 ea)	170-Small Fab	5029434
C10-21-2	Spring Cover	2 (2 ea)	170-Small Fab	5089546
C10-21-4	Lock Washer	8 Ea (8 ea)	170-Small Fab	5038404
C10-22	Lock Bumper	3 Ea (3 ea)	170-Small Fab	5078624
C10-23 ✓	Keeper Weldment	1 (1 ea)	170-Small Fab	
C10-23-1	Keeper Spacer	1 (1 ea)	170-Small Fab	5079563
C10-23-2	Keeper Spring	1 Ea (1 ea)	170-Small Fab	5060601
C10-23-3	Keeper Bushing	2 (2 ea)	170-Small Fab	5029201
C10-3	Load Beam Bumper	1 (1 ea)	170-Small Fab	5085088
C10-4	Lock	1 (1 ea)	170-Small Fab	
C10-4-10	Spring Anchor Spring Pin	2 (2 ea)	170-Small Fab	5029208
C10-4-11	Lock Shaft	1 (1 ea)	170-Small Fab	508861
C10-4-2	Lower Lock Roller	1 (1 ea)	170-Small Fab	
C10-4-3	Upper Lock Roller	1 (1 ea)	170-Small Fab	
C10-4-4	Upper Lock Roller Shaft	1 (1 ea)	170-Small Fab	
C10-4-5	Lower Lock Roller Shaft	1 (1 ea)	170-Small Fab	5029214
C10-4-6	Lock Spring	1 (1 ea)	170-Small Fab	5029215
C10-4-7	Spring Retaining Pin	1 (1 ea)	170-Small Fab	5029216
C10-4-8	Lock Bushing	2 (2 ea)	170-Small Fab	5060579
C10-4-9	Upper Roller DU Bearing	1 (1 ea)	170-Small Fab	5029218
C10-41	Stain Relief Connector	1 Ea (1 ea)	170-Small Fab	
C10-5A	Load Beam Assembly	1 (1 ea)	170-Small Fab	
C10-7	Locating Pin	3 (3 ea)	170-Small Fab	5072955
C10-8	Trunnion Bushing	2 (2 ea)	170-Small Fab	5068715
C10-9-1	Latch	1 (1 ea)	170-Small Fab	
C10-9-2	Latch Bearing Torrington	1 Ea (1 ea)	170-Small Fab	5068889
C10-9-4	Latch Shaft Bearing	2 (2 ea)	170-Small Fab	5074868
C10-9-5	Latch Shaft	1 (1 ea)	170-Small Fab	5077378
C10-9-6	Latch Return Spring	2 (2 ea)	170-Small Fab	5080841
C2-14-2	Label Rivets	2 Ea (2 ea)	170-Small Fab	5057170
C3-12-6	Lock Roller Pin Circlip	2 (2 ea)	170-Small Fab	5064543
C45-12-6	Retaining Ring	2 (2 ea)	170-Small Fab	5029303
C45-8-4	Solenoid Cover Gasket	1 (1 ea)	170-Small Fab	
C45-8-4	Solenoid Cover Gasket	1 (1 ea)	170-Small Fab	
C45-8-5	Solenoid Cover	1 Ea (1 ea)	170-Small Fab	
EL-PLUG-M	3-Prong Male Spade Plug	1 Ea (1 ea)	170-Small Fab	5054451
EL314-SJTOW	3 Wire	1 ft (1 ea)	170-Small Fab	5047767
MS21044N6	Nut, Self-Lock .375-24, UNJF-3B	6 Ea (6 ea)	170-Small Fab	5065332
MS21083N4	Nut	2 Ea (2 ea)	170-Small Fab	74964
MS27039-4-08	Screw	1 Ea (1 ea)	170-Small Fab	5039330
NAS1149F0432P	Washer	2 Ea (2 ea)	170-Small Fab	505005-1
NAS1149F0463P	Washer	3 Ea (3 ea)	170-Small Fab	5056461
NAS1149F0632P	Washer	12 Ea (12 ea)	170-Small Fab	5048297-1

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Start up Operation	C10	1	0	0
170-Small Fab	188-FPSS-1/4-20-3/8	2	100	0
	188-FPSS-1032-1/4	2	25	0
	188-SHCS-1032-3/4	8	0	0
	2595K2	1	0	0
	32446	2	0	0
	32448	2	0	0
	600.1309	1	0	0
	600.1347	1	0	0
	AN4-23A	2	632	0
	AN6-31A	6	0	0
	C10-1	1	0	0
	C10-10-1	1	0	0
	C10-10-2	1	0	0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



UP Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

C10-10-3	2	0	0
C10-11	1	0	0
C10-12	1	0	0
C10-12-0	1	0	0
C10-12-1	1	0	0
C10-2	1	0	0
C10-21-1	2	0	0
C10-21-2	2	0	0
C10-21-4	8	100	0
C10-22	3	0	0
C10-23	1	0	0
C10-23-1	1	0	0
C10-23-2	1	0	0
C10-23-3	2	0	0
C10-3	1	0	0
C10-4	1	0	0
C10-4-10	2	0	0
C10-4-11	1	0	0
C10-4-2	1	0	0
C10-4-3	1	0	0
C10-4-4	1	0	0
C10-4-5	1	0	0
C10-4-6	1	0	0
C10-4-7	1	0	0
C10-4-8	2	0	0
C10-4-9	1	0	0
C10-41	1	0	0
C10-5A	1	0	0
C10-7	3	0	0
C10-8	2	0	0
C10-9-1	1	0	0
C10-9-2	1	11	0
C10-9-4	2	0	0
C10-9-5	1	0	0
C10-9-6	2	0	0
C2-14-2	2	0	0
C3-12-6	2	0	0
C45-12-6	2	0	0
C45-8-4	2	0	0
C45-8-5	1	0	0
EL-PLUG-M	1	38	0
EL314-SJTOW	1	250	0
MS21044N6	6	0	0
MS21083N4	2	0	0
MS27039-4-08	1	0	0
NAS1149F0432P	2	1,624	0
NAS1149F0463P	3	184	0
NAS1149F0632P	12	60	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO040060

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO040060
PO Date: 5/31/18
Due Date: 6/4/18
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	176290	C60-OH	C-Series Remote Hook 6,000 lbs Lift Capacity	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
2	176761	C45-OH	C-Series Remote Hook 4,500 lbs Lift Capacity	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
3	177397	C45-K-OH	C-Series Remote Hook 4,500 lbs Lift Capacity - Keeperless	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
4	176292	SWA6A-2-OH	Electric Swivel 6,000 lb Safe Work Load (2,721 kg)	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
5	176763	SWA6A-4-OH	Electric Swivel 6,000 lb Safe Work Load (2,721 kg)	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
6	177593	SWA6A-3-OH	Electric Swivel 6,000 lb Safe Work Load (2,721 kg)	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
7	177594	SWA6A-3-OH	Electric Swivel 6,000 lb Safe Work Load (2,721 kg)	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
8	171614	C10-OH	C-Series Remote Hook 10,000 lbs Lift Capacity	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
Grand Total:									\$1,424.00	

Order Notes

rev'd M 11/06/06



Remote Cargo Hook Test Form

C10

Work Order

171614

Customer

Serial Number

M 483-01

Date

2018 / 07 / 06

# of Releases	Load (Lbs.)	Release Method	Remarks	Result	Pass/fail
1	25,000	Static Hold	Hold for two Minutes and reduce load to zero	N/A	PASS
10	5,000	Electircal, 25 volts	No "hang ups" permitted	N/A	PASS
2	10,000	Electircal, 22 volts	Current shall not exceed 12.4A	9.0 Amp.	PASS
2	7,500	Electircal, 22 volts	Current shall not exceed 12.4A	9.0 Amp.	PASS
2	5,000	Electircal, 22 volts	Current shall not exceed 12.4A	9.0 Amp.	PASS
2	2,500	Electircal, 22 volts	Current shall not exceed 12.4A	9.0 Amp.	PASS
2	500	Electircal, 22 volts	Current shall not exceed 12.4A	8.7 Amp.	PASS
1	10,000	Electircal, 20 volts	Current shall not exceed 11.3A	8.3 Amp.	PASS
1	10,000	Electircal, 28 volts	Current shall not exceed 15.8A	11.2 Amp.	PASS
1	10,000	Manual		N/A	PASS
1	10,000	Impact Test	Impact shackle 10 times, shall not release	N/A	PASS
1	N/A	Solenoid Ohms	Shall not exceed 1.7-2.0 Ohms	2.0 Ohms	PASS
1	N/A	Electircal Continuity	Across both wires	N/A	PASS

Test Conducted By

ALAIN PATRY

Technician

Signature:

Sylvie Sanchez
QC 5 Small FAB / QA

Submit